2001 Prospectus
for
Continuing Transportation Planning
for the
Greensboro
Metropolitan Planning Organization

Prepared by:

Statewide Planning Branch
North Carolina Department of Transportation

In cooperation with the:

City of Greensboro
County of Guilford
Piedmont Authority for Regional Transportation
Region G Council of Governments
NCDOT Public Transportation Division
NCDOT Division 7
NCDOT Rail Division
NCDOT Division of Bicycle and Pedestrian Transportation
U. S. Department of Transportation

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I. INTRODUCTION

The City of Greensboro, County of Guilford, Piedmont Triad (Region G) Council of Governments, and the North Carolina Department of Transportation, in cooperation with the various administrations within the U.S. Department of Transportation, participate in a continuing transportation planning process in the Greensboro Urban Area as required by Section 134 (a), Title 23, United States Code. A Memorandum of Understanding approved by the municipality, the county, and the North Carolina Department of Transportation establishes the general operating procedures and responsibilities by which short-range and long-range transportation plans are developed and continuously evaluated.

The Prospectus contained herein is primarily a reference document for the transportation planning staff. Its purpose is to provide sufficiently detailed descriptions of work tasks so that staff and agencies responsible for doing the work understand what needs to be done, how it is to be done, and who does it.

A secondary purpose of the Prospectus is to provide sufficient documentation of planning work tasks and the planning organization and procedures so that documentation is minimized in a required annual Planning Work Program (PWP). The PWP identifies the planning work tasks that are to be accomplished in the upcoming fiscal year and serves as a funding document for the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) of the U.S. Department of Transportation.

The Metropolitan Planning Organization (MPO) is responsible for carrying out the transportation planning process in the Greensboro Urban Area. The MPO is an organization consisting of the representatives of general purpose local government; the North Carolina Department of Transportation; a Transportation Advisory Committee; a Technical Coordinating Committee; and the various agencies and units of local and State government participating in transportation planning for the area.

The respective governing boards (the City Council or County Board of Commissioners) make policy decisions for local agencies of government. The Board of Transportation makes policy decisions for the North Carolina Department of Transportation. The municipal governing board and the N.C. Department of Transportation have implementation authority for construction, improvement, and maintenance of streets and highways.

The Memorandum of Understanding established a Transportation Advisory Committee (TAC) composed of representatives from the policy boards to provide policy direction for the planning process, and to improve communications and coordination between the several Policy Boards. The TAC is responsible for (1) review and approval of the PWP; (2) review and approval of the area's Metropolitan Transportation Improvement Program (MTIP) which ensures coordination between local and State programs; (3) review of the National Highway System, review and approval of changes to the Functional Classification Designation (as it pertains to the Surface Transportation Program) and review and approval of the Metropolitan Area Boundary; (4) endorsement, review, and approval of the Prospectus; (5) guidance on transportation goals and

objectives; and (6) review and approval of changes to the adopted Long-Range Transportation Plan. As required by North Carolina General Statutes 136-66.2, revisions to the Thoroughfare Plan must be jointly approved by the local governing boards and by the North Carolina Department of Transportation. NCDOT is currently drafting revisions to GS 136-66.2 designed to bring the MPO into this approval process.

A Technical Coordinating Committee (TCC), also established by the Memorandum of Understanding, is responsible for supervision, guidance, and coordination of the continuing planning process, and for making recommendations to the local and State governmental agencies and the Transportation Advisory Committee regarding any necessary action. The TCC is also responsible for review of the National Highway System and for development, review, and recommendation for approval of the Prospectus, PWP, TIP, Functional Classification Designation (as it pertains to the Surface Transportation Program), Metropolitan Area Boundary revisions, and technical reports of the transportation study. The membership of the TCC consists of, but is not limited to, key staff from the North Carolina Department of Transportation, the Piedmont Triad Council of Governments, Federal Highway Administration, the counties, transit operators, and the municipalities.

The City of Greensboro is designated as the Lead Planning Agency (LPA) and is primarily responsible for annual preparation of the Planning Work Program and Metropolitan Transportation Improvement Program. The City of Greensboro is the primary local recipient of planning funds received from USDOT for the Greensboro Urban Area. The Piedmont Triad Council of Government serves as the E.O.12372 intergovernmental review agency.

Transportation planning work is divided into two elements in the Prospectus according to type of activity:

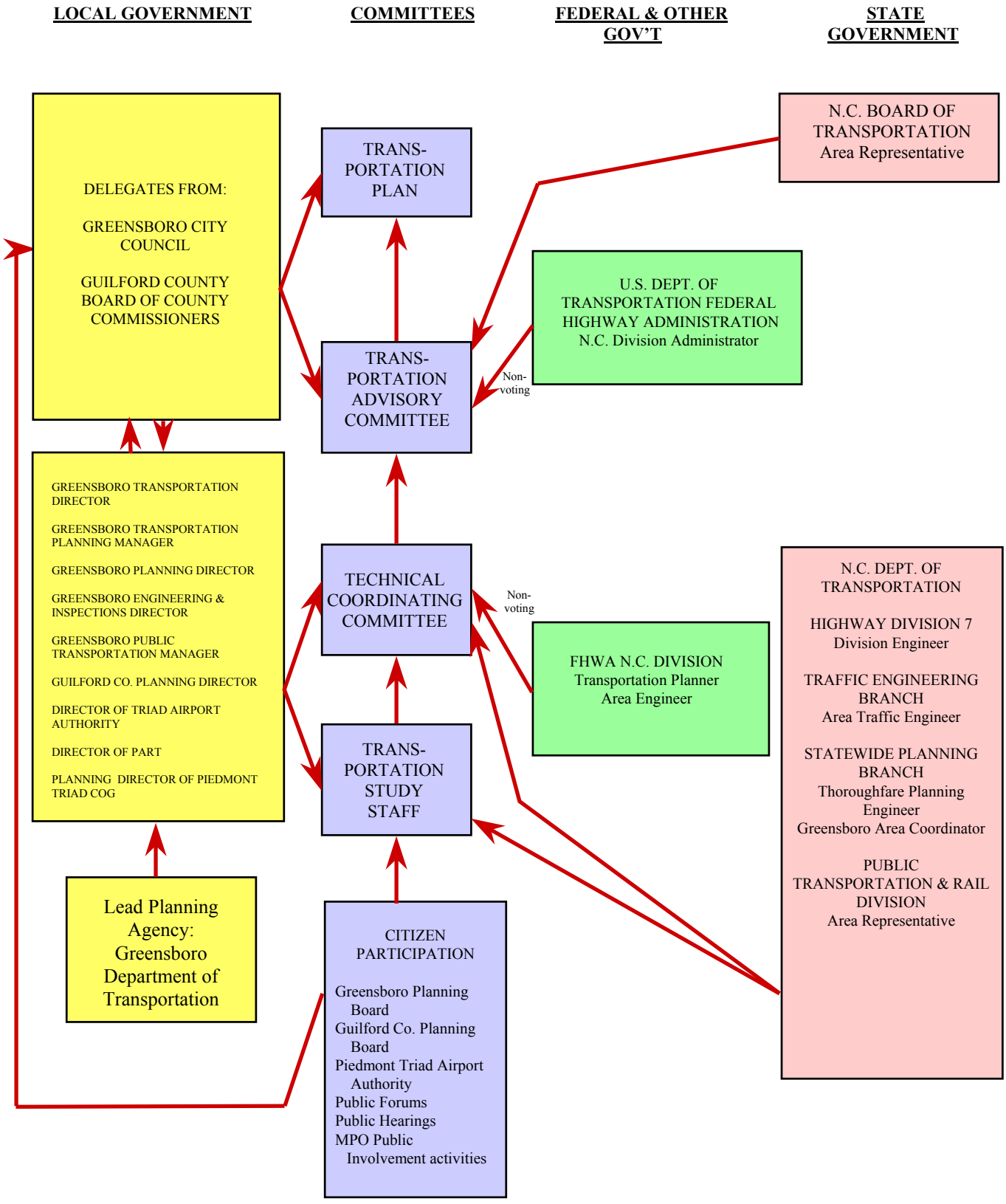
Continuing Transportation Planning, Chapter II
Administration, Chapter III

Citizen participation is an important element of the transportation planning process and is achieved by making study documents and information available to the public and by actively seeking citizen participation during the planning process. Involvement is sought through such techniques as goals and objective surveys, neighborhood forums, drop-in centers, workshops, seminars, and public hearings. Elected or appointed city and town representatives and municipal and county planning boards should serve as primary sources in gaining public understanding and support for the transportation planning activity.

An organization chart for continuing transportation planning for the Greensboro Urban Area is shown in Figure 1. The history and status of transportation planning is given in Appendix A. The following are contact agencies for information concerning the transportation planning process in Greensboro Urban Area.

FIGURE 1

ORGANIZATION CHART
CONTINUING TRANSPORTATION PLANNING PROCESS
FOR THE GREENSBORO METROPOLITAN PLANNING ORGANIZATION



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II. CONTINUING TRANSPORTATION PLANNING
Methodology, Responsibilities and Schedules

The continuing transportation planning work tasks are described here and following in Chapter III. Appendix A details the history of transportation planning in the area. Appendix B contains the community goals and objectives for the transportation system.

II-A. Surveillance of Inventory Data

A number of conditions generally need to be continuously surveyed and compiled annually to determine whether previous projections are still valid or whether plan assumptions need to be changed. Surveillance tasks are described in the following sections and agency responsibilities are listed in Table 1.

II-A-1. Traffic Volume Counts

Annual Average Daily Traffic (AADT) will be estimated on a biennial schedule at specified locations on each segment of the principal arterial, minor arterial, and collector street systems inside the transportation study area. Traffic data will be collected on weekdays for a minimum of 48 hours. Axle counts will be converted to volume counts using adjustment ratios that account for multiple-axle vehicles. Volume counts will be seasonally adjusted and averaged to generate AADT estimates. These estimates will be evaluated for temporal and spatial consistency. Factors for seasonal adjustment will be based on traffic data from permanent traffic monitoring stations located at typical urban settings throughout the State.

The Greensboro Department of Transportation is responsible for obtaining counts at specified locations on the Greensboro Urban Area Municipal Street System and for furnishing the raw daily traffic counts, count information, and location maps to the Statewide Planning Branch (SWP) the first week of November each scheduled collection year. The Statewide Planning Branch is responsible for obtaining counts at specified locations on other segments of the major street system, for updating the count location map biannually to reflect any changes made in the major street system, for preparing the Annual Average Daily Traffic Volume Map, and for sending this information to the Lead Planning Agency.

As part of the Congestion Monitoring Program, the City of Greensboro will be responsible for taking traffic counts at a specified number of count stations that will be representative of the street system as a whole. These counts will be at 15-minute intervals and collected for a minimum of 48 hours so they can be used to determine peak hour spreading and will be taken every three years.

Special counts may be taken during travel model updates or validations. These

include counts at screen-line stations, external stations, major trip generators, and key intersections as needed. Traffic count types may include daily, hourly, vehicle classification, or turning movements. The Statewide Planning Branch will coordinate traffic data collection for these special counts.

II-A-2. Vehicle Miles of Travel (VMT)

Vehicle miles of travel are computed by multiplying the length of each link times the annual average daily traffic volume on that link. Vehicle miles of travel are tabulated annually by county and functional classification by SWP-Road Inventory Section. These VMT estimates are used for air quality monitoring by the Division of Air Quality (DAQ). MPOs may also choose to estimate VMT for the urban area on a regular basis.

II-A-3. Street System Changes

Records on improvements to the state highway system, whether planned, underway, or completed, are maintained by the NCDOT Division Engineer. Each municipality should maintain similar records for its municipal street system. The municipalities participating in the Powell Bill Program must certify city street mileage maintained annually.

An inventory of the geometry and signalization of the existing major street system for the planning area will be maintained by the MPO. Periodically or as changes or additions to the major street system occur, the inventory may be updated. This inventory must be kept current when the travel model is periodically updated.

II-A-4. Traffic Accidents

North Carolina law requires that any traffic accident involving personal injury and/or property damage in excess of $1000.00 be reported in detail to the Division of Motor Vehicles (DMV) of the NCDOT. The DMV also receives a detailed report on any accident investigated by a law officer. Copies of all these reports are forwarded to the Traffic Engineering Branch of the Division of Highways, where the information is summarized and stored. Annual analyses will compare each year's high accident locations to previous years' high accident locations.

The Traffic Engineering Branch will provide the Annual Highway Safety Program Listing Report on request.

II-A-5. Transit System Data

Items to be considered are transit patronage, route changes, service miles, load

factor, route ridership changes, boarding and alighting counts, headways, frequency, and service hours.

II-A-6. Dwelling Unit, Population, and Employment Changes

Changes in population and development across the service area will be identified and evaluated to determine necessary restructuring of transportation services to meet current and forecasted demand. Census data, local parcel, zoning, and tax data records, Employment Security Commission, and private vendors are acceptable sources of information for this purpose. This item may include the development and maintenance of a GIS database.

II-A-7. Air Travel

Data may be collected and analyzed to determine influence of local air travel on the area's transportation system and identify needs for additional services. Airport entrance traffic counts would help relate air travel to ground travel in future updates. A ground transportation survey is a good example of this.

II-A-8. Vehicle Occupancy Rates (Counts)

Vehicle occupancy counts are collected across the service area to measure effectiveness of transit projects. Information will also be used to comply with the Clean Air Act and is useful in the trip generating process of modeling traffic during the travel modeling phase, as well as other parts of the Long-Range Transportation Plan.

II-A-9. Travel Time Studies

Peak and off-peak travel time studies may be conducted for those street segments that are included in the Congestion Management System. The travel time studies may be required during the travel model calibration phase as well.

II-A-10. Mapping

Base maps will be created at least every seven to ten years by the Statewide Planning Branch. These maps should be produced at scales of 1”=1000’ and 1”=3000’. Maps should cover an area slightly larger than the Metropolitan Area Boundary. Zone maps will be prepared before each major update of the plan (at least every five years) and will

be prepared by the Statewide Planning Branch, with assistance from other members of the TCC. Existing and future land use maps should be prepared by the City of Greensboro and Guilford County at least every five years, prior to a major update of the plan.

II-A-11. Central Area Parking Inventory

Inventories of both on- and off-street parking supply in the Greensboro central area are maintained by the Greensboro Department of Transportation. Periodic updates and inventories of other parking facilities in other areas will be performed as determined by the MPO through the development of the Unified Planning Work Program. Data collected should include parking policies, ownership, and rates.

II-A-12. Bicycle and Pedestrian Facilities Inventory

An inventory of significant municipal, state, and federal bicycle and pedestrian transportation facilities shall be maintained. These systems shall be incorporated in the Long-Range Transportation Plan update and analyzed in conjunction with other transportation performance measures.

Table 1: Surveillance of Inventory Area

TABLE 1

AGENCY RESPONSIBILITIES
FOR
SURVELLIANCE OF
INVENTORY DATA
GREENSBORO
URBAN AREA

▲ Primary Responsibility

● Supporting responsibility

		City of Greensboro	Transportation Department	Planning Department		PART	Statewide Planning Branch	Guilford County	Triad Airport Authority	Piedmont Triad COG	NCDOT Division 7 Offices	NCDOT Traffic Engineering Branch	NCDOT Public Transportation & Rail
II-A-1	Traffic Volume Counts		●				▲						
II-A-2	Vehicle Miles of Travel						▲						
II-A-3	Street System Changes		●				●				▲		
II-A-4	Traffic Accidents		●				●					▲	
II-A-5	Transit System Data		▲										●
II-A-6	Dwelling Unit, Population, & Employment Changes		▲	●		●		●		●			
II-A-7	Air Travel								▲				
II-A-8	Vehicle Occupancy Rates (Counts)		▲				●						
II-A-9	Travel Time Studies		●				▲					●	
II-A-10	Mapping		▲				●						
II-A-11	Central Area Parking Inventory		▲										
II-A-12	Bicycle and Pedestrian Facilities Inventory		▲				●						

II-B. Long-Range Transportation Plan (LRTP)

Federal Law (as updated by TEA-21) and US DOT's Metropolitan Planning Regulations, require MPOs to have a Long-Range Transportation Plan that: is multi-modal, is financially constrained, has a minimum 20 year horizon, adheres to the MPO's adopted public involvement policy, has reasonable growth forecasts, and is approved by the MPO. The LRTP must be reaffirmed every 5 years. In air quality non-attainment and maintenance areas, the LRTP must be updated and proven to conform with the State Implementation Plan (SIP) every 3 years. The physical product of this LRTP will be in one or more assembled documents containing all plan elements and will be the responsibility of the MPO.

Evaluation of the overall Long-Range Transportation Plan should be undertaken at such time that the surveillance items indicate that travel or land development trends have begun to deviate significantly from forecasts, or at such time that new data are required for facility design.

For non-attainment or maintenance areas, the Long-Range Transportation Plan must conform to the intent of the State Implementation Plan (SIP). The Statewide Planning Branch and/or the MPO are responsible for the analysis of all elements of a multi-modal transportation plan to ensure that they conform to the intent of the State Implementation Plan. Specifically, any Long-Range Transportation Plan Revisions must be analyzed for conformity with the SIP.

With regard to budget preparation and setting priorities, the Long-Range Transportation Plan is inseparable from its Transit Element. The Transit Element consists of short-range transit planning functions, and the long-range transit plan. HOV facilities, and even ridesharing and surface bus routes, may need to be addressed in the Transit Element as well as the Thoroughfare Plan. Since transit use depends heavily on land use characteristics and pedestrian accessibility, creating a "mode neutral" model and plan requires special attention to transportation/land use interactions. Realistic assumptions are needed concerning potential travel markets and the likely degree to which existing land use, travel behavior, and pricing policies can be influenced. All plans should be carefully analyzed for internal consistency, uncertainty, and sensitivity to assumptions and errors.

TEA-21 stresses "seven planning factors" that should be considered by the MPOs to guide the development of the LRTP. They are:

- Support the economic vitality of the community, especially by enabling global competitiveness, productivity and efficiency;
- Increase the safety and security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility options available to people and freight;

- Protect and enhance the environment, promote energy conservation, improve quality of life;

- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;

- Promote efficient system management and operations; and

- Emphasize the preservation of the existing transportation system.

The TCC prepares recommendations of work required for plan reappraisal, to be reviewed and approved by the TAC. Agency responsibilities for various work tasks in the Long-Range Transportation Plan evaluation elements are given in Table 2. The following work elements may be required depending upon the depth of the studies needed.

II-B-1. Collection of Base Year Data

Collection of the following variables for existing conditions, by traffic zone, is required: (1) population, (2) housing units, and (3) employment. It is expected that re-projection of multi-modal travel patterns, would require a re-tabulation of these factors used in developing the travel models. A GIS database may be used to maintain housing and land use information. The MPO will normally be responsible for collecting socioeconomic data, and providing it in spreadsheet or database form to the SWP as needed.

II-B-2. Collection of Network Data

Collection of the following variables describing the existing street system is necessary to build a base network for the travel model: 1) posted speed limit; 2) width/lanes; 3) segment length; 4) traffic signal locations. These items are generally the standard parameters required, but others may be needed as models become more sophisticated or if analysis for air quality becomes necessary. The network development process is included in this task item.

If a "Modeling Agreement" between the MPO and the SWP is adopted, it may be either a part of the Prospectus, or a stand-alone document. The agreement will detail accepted standards and practices, used in the specific travel model, to calibrate and substantiate acceptable tolerances. Typically, travel models use the following steps:

a. Trip Generation – This step generally involves analysis of actual and projected socio-economic data including, but not limited to, population, dwelling units, and employment. Based on these and other factors, an approximation of the number of trips generated by sub-area or zone can be determined.

b. Trip Distribution - Using formulas based on the gravity model, an approximation of where the specific generated trips are beginning and ending is determined.

c. Modal Split – Unless the model is used for transit or other modes of trips, this step may be skipped. This step is an analysis of mode chosen and factors that lead to those choices. Factors could include actual and perceived travel times, actual and perceived travel costs, as well as availability or convenience of certain modes.

d. Trip Assignment - This step loads trips onto the network based on the paths selected for the origins and destinations from above. The effects of congestion and the somewhat random nature of travelers can be taken into account through loading techniques such as incremental restraint, equilibrium, stochastic or all-or-nothing assignments.

e. Accuracy Checks – Checks involve comparing or calibrating mathematically generated data to actual field conditions. These typically involve screen-line crossings to within 5% and link volumes to within 10% of ground counts.

A technical summary report of the travel modeling process and results will be provided by the modeling custodian, as named in the modeling agreement.

II-B-3. Travel Model Updates

Travel Model Updates are important in the development and implementation of the Long Range Transportation Plan and in project development by incorporating the latest planning assumptions and thereby increasing the accuracy of the results. Periodic updates are required by Federal regulations as well. Updates to the travel model ensure that the Goals and Objectives of the LRTP are based on the most recent and accurate understanding of the function of the transportation network. The following components of the travel model will generally be updated or re-forecasted: land uses and socioeconomic data; traffic data for existing and planned transportation system; transportation networks; traffic characteristics of identified major activity centers, submodels, etc.

II-B-4. Travel Surveys

These surveys may be implemented to attain such items as origins and destinations, travel behavior, transit ridership, commercial vehicle usage, workplace commuting, freight movement, etc. Therefore, these surveys may be home interviews, cordon origin-destination counts, and on-board transit interviews to name a few.

New surveys will be conducted at such time as is necessary for the reevaluation of travel models. Because these surveys are very cost prohibitive, the survey responsibility and funding sources will be determined at the onset of the study.

II-B-5. Forecast of Data to Horizon Year

The travel models determine what planning data must be projected to a new design year. In general, the procedure will be to project population and socio-economic factors independently on an area-wide basis, to cross check these projections and convert them to land use quantities if required, and to distribute the projected planning data to traffic zones on the basis of land capabilities, accessibility, and community goals as implemented through land use controls. The MPO will provide the approved socioeconomic forecasts.

II-B-6. Community Goals and Objectives

In the evaluation of community goals and objectives, the MPO will formulate policies ensuring local goals and objectives are identified and addressed during the development and implementation of the Long-Range Transportation Plan. Some goals and objectives for Greensboro are listed in Appendix B.

II-B-7. Forecasts of Future Travel Patterns

The forecast of future travel patterns will result from using the forecasted planning data as input to the travel forecast models. The models are sensitive to changes in trip generation, trip purpose, trip length, vehicle occupancy, travel mode, and patterns of daily travel. The forecast of travel patterns will include a review of these factors and comparison to community goals and objectives to determine if changes in assumptions are warranted.

II-B-8. Capacity Deficiency Analysis

A system planning level capacity deficiency analysis will be made to determine existing and projected street deficiencies.

Link capacities will be calculated in accordance with procedures based on the latest edition of the *Highway Capacity Manual*, Special Report 209, Transportation Research Board, National Academy of Sciences, National Research Board.

II-B-9. Highway Element of the LRTP

The highway element of the LRTP and the Thoroughfare Plan element of the LRTP (the non-time bound, non-fiscally constrained long-range roadway plan) will be evaluated in terms of projected travel, capacity deficiencies, travel safety, physical conditions, costs, design, travel time, and possible disruption of people, businesses, neighborhoods, community facilities, and the environment. The evaluation will include an analysis of the Long-Range Transportation Plan and the interrelationship between alternative travel modes. Thoroughfare recommendations should include adequate right-of-way for improvements consistent with the Bicycle & Pedestrian Plan, Transit Plan and other inter-modal connection facilities along logical corridors. If major deficiencies are found in the existing plan, alternative plans will be evaluated. It should be noted that any regionally significant Thoroughfare Plan revisions must be analyzed for conformity with the SIP in non-attainment/maintenance areas. Alternatives that may be considered include (1) a Do-Nothing Alternative, (2) Alternative Modes, (3) Travel Demand Management, and (4) Alternative Design: Types and Standards.

II-B-10. Transit Element of the LRTP

Transit planning incorporates all vehicular modes other than trucks and the single occupant automobile, including (but not limited to) fixed-route bus service, ridesharing, fixed-guideway transit, and demand responsive transit. The transit plan describes existing transit service and unmet needs, and identifies any additional potential markets. New types, and areas of service may be recommended, supported by ridership forecasts and other analyses. Assumptions and implications related to land use, travel behavior, parking policies and other variables are clearly defined. Establishing objective measures of effectiveness is critical for evaluating transit alternatives. Measures of transit effectiveness include both the reduction of auto use and congestion, and the broadening of mobility options.

II-B-11. Bicycle and Pedestrian Element of LRTP

A bikeway and pedestrian plan is an essential part of the multi-modal LRTP for an urban area. The report entitled, *Incorporating Bicycle and Pedestrian Elements into Transportation Plans,* produced by the Statewide Planning Branch, describes the minimum essentials of this task. At a minimum, an update to the inventory of existing and proposed bicycle and pedestrian elements should be included in the LRTP.

II-B-12. Airport/Air Travel Element of LRTP

The Airport Master Plan may be coordinated with the MPO (where feasible), and be an element of the LRTP. It should be incorporated into zonal projection for the long-range transportation plan.

II-B-13. Collector Street Element of LRTP

Collector street planning will be conducted as required to develop standards and preliminary locations for collector streets in advance of development. The objective of this planning activity is to ensure optimum traffic operations for the developing street system and transit accessibility to developing areas.

II-B-14. Rail, Waterway, or Other Mode of the LRTP

Some MPOs may have additional transportation elements that link to the multi-modal LRTP. The MPO should provide documentation to be included in the LRTP.

II-B-15. Freight Movement/Mobility Planning

As one of the TEA-21's seven planning factors, emphasis is placed on increasing accessibility and mobility options available to people and freight. Tasks included in this category may be a survey of freight carriers; recommendations for improving truck mobility or train/truck inter-modal movements; and identifying acceptable truck routes.

II-B-16. Financial Planning

As required by TEA-21, the LRTP must be fiscally constrained. Project cost estimates and revenue forecasts are required. Federal regulations allow flexibility in the methodologies used for analysis, but they must include estimates for maintenance as well as construction. This item also covers identifying new and alternative funding sources, including new taxing strategies, impact fees, and public-private partnerships.

II-B-17. Congestion Management Strategies

The 3-C Transportation Planning Process, as enhanced by TEA-21, stresses efficient system management and operations. Planning for congestion management strategies such as these below are included in this item.

a. Transportation Demand Management (TDM)
b. Intelligent Transportation System (ITS)
c. High Occupancy Vehicle lanes or priorities (HOV)
d. Access Control and Management
e. Traffic Operations Improvements, Incident Management
f. Growth Management

This item covers the costs associated with planning for these items, coordination with public and private stakeholders, and marketing or public education.

II-B-18. Air Quality Planning/Conformity Analysis

The transportation sector is a key participant in the development and application of the State Implementation Plan (SIP) for air quality. MPOs have the responsibility to make a determination as to whether or not transportation plans, programs, and projects conform to the intent of the SIP. Tasks involved in this pursuit include, but are not limited to:

a. Participation in interagency consultation process as part of SIP development and conformity determination development;

b. Providing assistance to the North Carolina Department of Environment and Natural Resources in developing and maintaining mobile source emission inventories;

c. Participating in development of Transportation Control Measures (TCMs) for the SIP;

d. Implementation of TCMs as appropriate; and

e. Performing analysis and approving conformity determination* as required (the Statewide Planning Branch will do conformity analysis and report for Greensboro if it becomes a non-attainment area).

*TAC must make conformity determination finding.

Table 2: Long-Range Transportation Plan

TABLE 2

AGENCY RESPONSIBILITIES
FOR
LONG RANGE TRANSPORTATION PLAN
GREENSBORO URBAN AREA

▲ Primary Responsibility

● Supporting responsibility

		Lead Planning Agency City of Greensboro	Transportation Department	Planning Department	PART	Statewide Planning Branch	Guilford County	Triad Airport Authority	Piedmont Triad COG	NCDOT Division 7 Offices	NCDOT Traffic Engineering Branch	NCDOT Public Transportation & Rail
II-B-1	Collection of Base Year Data		▲	●	●	●	●	●	●			
II-B-2	Collection of Network Data		●		●	▲						
II-B-3	Travel Model Updates		●		●	▲						
II-B-4	Travel Surveys		●		●	▲						
II-B-5	Forecast of Data to Horizon Year		▲	●	●	●	●	●				
II-B-6	Community Goals and Objectives		▲	●	●	●			●			
II-B-7	Forecasts of Future Travel Patterns		●		●	▲		●				●
II-B-8	Capacity Deficiency Analysis		●			▲		●				
II-B-9	Highway Element of LRTP		▲		●	●	●			●		
II-B-10	Transit Element of LRTP		▲		●							●
II-B-11	Bicycle and Pedestrian Element of LRTP		▲	●		●						
II-B-12	Airport/Air Travel Element of LRTP						●	▲				
II-B-13	Collector Street Element of LRTP		▲	●		●						
II-B-14	Rail, Waterway, or Other Mode LRTP		●		▲	●						●
II-B-15	Freight Movement/Mobility Planning		▲				●					
II-B-16	Financial Planning		▲			●		●		●	●	●
II-B-17	Congestion Management Strategies		▲	●				●		●	●	●
II-B-18	Air Quality Planning/Conformity Analysis		▲									

III. ADMINISTRATION

The administration of the planning process is organized into five areas. A Planning Work Program (for MPOs under 200,000 in population), or a Unified Planning Work Program (for MPOs over 200,000 in population, also known as Transportation Management Areas) is prepared each year and details what work will be completed for the next fiscal year. The Metropolitan Transportation Improvement Program is prepared on a biennial cycle, and is the official TIP for the metropolitan area. It is incorporated into the State TIP either directly or by reference. The remaining sections are Civil Rights and Regulatory Compliance, Incidental Planning and Project Development, and Management and Operations. Agency responsibilities for administrative work tasks are given in Table 3.

III-A. Planning Work Program

A Planning Work Program (PWP) will be prepared annually by the Lead Planning Agency in cooperation with other participating agencies and under the guidance of the Technical Coordinating Committee. The PWP will present the proposed planning work program for the next year and review the recent accomplishments of the planning process. The PWP will be cross-referenced to the Prospectus to minimize repetitive documentation. The PWP will be reviewed and approved by the Transportation Advisory Committee, by the State and Regional intergovernmental review process, the North Carolina Department of Transportation, and Federal agencies providing planning funds for continuing transportation planning. These Federal planning funds are provided by FHWA (Section 104(f)) and FTA (Section 5303). Preparation of a Section 5303 Grant application is also required in addition to the PWP to receive planning funds from FTA.

The MPO must certify their 3-C Transportation Planning Process annually as part of the PWP adoption.

III-B. Transportation Improvement Program

The Metropolitan Transportation Improvement Program (MTIP) consists of two parts: (1) a metropolitan programming document which is coordinated with the State Transportation Improvement Program (STIP) and (2) a list of prioritized needs.

Prepared every two years, the MTIP is a short range, three to seven-year multi-modal program which identifies transportation improvements recommended for advancement during the program period, identifies priorities, groups improvements into staging periods, includes estimated costs and revenues, and is fiscally constrained.

The MPO Priority Needs List is developed biennially to communicate the MPO's priorities regarding the funding schedule on already programmed projects, the acceleration of long term projects into the program, and the addition of new projects to the STIP. The List may include cost estimates, purpose and need statements, and other supporting materials. The Priority Needs List is a key step in cooperative TIP development between the MPO, the transit operator, and NCDOT.

III-C. Civil Rights Compliance (Title VI) and Other Regulatory Requirements

III-C-1. Title VI

This portion of the MTIP contains an updated Civil Rights statistics report for submittal to FTA to determine MPO compliance with civil rights provisions. Title VI states: The MPO shall comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (78 Stat. 252), 49 U.S.C. 2000D TO 2000-D-4; the Regulations of DOT issued thereafter in the Code of Federal Regulations (commonly and herein referred to as CFR Title 49, Subtitle A, Part 21), and the assurance by the MPO pursuant thereto.

III-C-2. Environmental Justice

Executive Order (E. O.) 12898, Federal Actions to Address Environmental Justice in Minority Populations, requires all Federal agencies to identify and address Title VI and Environmental Justice requirements. Recipients of federal funds, including NCDOT and the MPOs, must assure compliance with these requirements. As mandated by the FHWA, planning activities should focus on complying with E. O. 12898 and the three basic principles of Environmental Justice as follows:

a. Ensure public involvement of low-income and minority groups in decision making;

b. Prevent disproportionately high and adverse impacts to low-income and minority groups resulting from decisions made; and

c. Assure low-income and minority groups receive a proportionate share of benefits resulting from decisions made.

III-C-3. Minority Business Enterprise Planning (MBE)

There is a continuing need to address the Minority Business Enterprise (MBE) as a part of the planning and programming phases of project development. Areas are encouraged to give full consideration to the potential services that could be provided by MBEs in the development of transit plans and programs, and the provision of transit service. Transit properties with established MBE programs are encouraged to work with MPOs, utilizing transportation planning funds to update existing MBE programs as necessary.

III-C-4. Planning for the Elderly and Disabled

The Americans with Disabilities Act of 1990 (ADA) ensures that persons with disabilities enjoy access to the mainstream of American life. The ADA expands on the Section 504 program to comprehensively address mobility needs of persons with disabilities.

Joint FHWA and FTA regulations require that the urban transportation planning process include activities specifically emphasizing the planning, development, evaluation and reevaluation of transportation facilities and services for the elderly and disabled, consistent with ADA. This process should include an analysis of inventories of disabled persons, their locations, and special transportation services needed. These regulations emphasize estimation of travel needs through statistical analysis and a self-identification process.

Both thoroughfare and transit planning activities should focus on complying with the key provisions of the ADA, and include special efforts to plan transportation facilities and services that can be effectively utilized by persons with limited mobility, such as:

a. Public transit authorities providing fixed route transit service must provide comparable level paratransit service to disabled individuals who cannot otherwise use the fixed route service;

b. Transit authorities providing elderly and disabled oriented demand responsive service must also buy or lease accessible vehicles unless it can be demonstrated that the system provides a level of service to the disabled equivalent to that provided to the general public;

c. New facilities built must be accessible and existing facilities with major alterations must be made accessible to the maximum extent feasible; and

d. Planning for better mobility through such items as wheelchair curb cuts, longer pedestrian crosswalk times at certain intersections, and special parking spaces and rates for cars with one or more transportation disadvantaged occupant(s).

III-C-5. Safety/Drug Control Planning

MPOs may pass planning funds through to transit operators for use in performing safety audits and in the resultant development of safety/security improvement and in alcohol/drug control planning, programming, and implementation. Attention should be given to the development of policies and planning for the proper safety related maintenance of transit vehicles; fire safety; substance abuse where it affects employee performance in critical safety related jobs; emergency preparedness to improve the capability to respond to transit accidents/incidents; and security to reduce theft and vandalism of transit property, and to counter potential politically motivated terrorism directed against transit users, facilities, and equipment.

III-C-6. Public Involvement

An effective public involvement process provides for an open exchange of information and ideas between the public and transportation decision-makers. The overall objective of an area's public involvement process is that it be proactive, provide complete information, timely public notice, full public access to key decisions, and opportunities for early and continuing involvement (23CFR450.212(a) and 450.316(b)(1)). It also provides mechanisms for the agency or agencies to solicit public comments and ideas, identify circumstances and impacts which may not have been known or anticipated by public agencies, and by doing so, to build support among the public who are stakeholders in transportation investments which impact their communities. The MPO should have a formalized, written and adopted public involvement process.

III-C-7. Private Sector Participation

Federal regulations require that private operators be afforded the "maximum feasible opportunity" to participate in the planning and provision of local transportation services. The purpose of the private sector participation requirement is to give private operators the opportunity to initiate involvement. In an effort to more effectively address this requirement, the evaluation of private sector service alternatives has been incorporated into the transportation planning process.

The general criteria for making public/private service decisions may include but is not limited to:

a. Comparative cost of private versus public services in similar situations;
b. Perceived quality and reliability of service;
c. Local control of services;
d. Responsiveness and flexibility of operators; and
e. Private operator financial stability.

III-D. Incidental Planning and Project Development

III-D-1. Transportation Enhancement Planning

This category of federal funding began with ISTEA and was carried through in TEA-21 legislation. MPO assistance to applicants, review of applications, and preparing endorsements is included under this item. The MPO shall approve all proposed enhancement projects for inclusion in the Metropolitan Transportation Improvement Program (MTIP) prior to being forwarded to NCDOT for consideration of inclusion in the State Transportation Improvement Program (STIP). Sponsoring agencies must submit completed application packages to the NCDOT for consideration by the Transportation Enhancement Committee.

III-D-2. Environmental Analysis and Pre-TIP Planning

The proposed Thoroughfare Plan and selected alternative plans will be evaluated based on criteria established by the goals and objectives reevaluation study and impact on the environment. The Public Transportation Plan and the Airport Master Plan should also be evaluated on these criteria. It is anticipated that the evaluation will be in the following areas: efficiency in serving travel demands; energy conservation; cost; and impact on the physical, social, and economic environment. The physical environmental evaluation will include air quality, water quality, soils and geology, wildlife and vegetation. The social environmental considerations will include housing and community cohesion, low-income and minority populations, noise, religious and educational facilities, parks and recreational facilities, historic sites, public health and safety, national defense, and aesthetics. Effects on business, employment and income, land development patterns, and public utilities will be studied as part of the economic environmental evaluation.

The TCC, LPA, Statewide Planning Branch and Resource Agencies will jointly recommend projects for Pre-TIP Planning. The TAC will be kept informed concerning the results of these studies. Public review will be incorporated as part of the alternatives analysis.

III-D-3. Special Studies

During annual reevaluation of the Long-Range Transportation Plan, there occasionally is a need to make a specific study of a transportation corridor to determine the best solution to a problem. While this may include development of a simple functional design for corridor protection, more detailed studies may include evaluations of alternative modes or alignments for cost, feasibility, environmental impact, and design.

In a similar manner, special problems may arise in relation to major land use changes when large-scale traffic generators (hospitals, regional malls, etc.) will either be developed or closed. These land use changes could significantly affect the regional distribution and/or amount of traffic, and could require changes to the Long-Range Transportation Plan to accommodate the newly forecasted growth.

The extent, responsibility, and cost for a corridor or sub-area study, which should be conducted within the work plan of the TCC, would be determined prior to its initiation.

III-D-4. Regional or Statewide Planning

The MPO will coordinate its activities with state and federal agencies involved in transportation planning activities on the regional, state, and national levels. Examples of such activities include: Functional Reclassification of roads, designation of Urban Area Boundaries, National Highway System coordination, Highway Performance Monitoring System activities, and regional transit coordination.

Involvement could include, but is not limited to: collection and compilation of data; participation in related workshops, conferences, and meetings; and review and administrative approval or endorsement of documentation.

III-E. Management and Operations

The continuing transportation planning process requires considerable administrative time for attending quarterly committee meetings, preparing agendas and minutes to these meetings, training, preparing quarterly progress reports, documenting expenditures for the various planning work items, and filing for reimbursement of expenditures from the PL fund account and other Federal Funds.

It is also necessary to periodically review and update the Prospectus, Memorandum of Understanding, PL Agreement and Modeling Agreement. The Statewide Planning Branch will take the lead in updating these documents.

The daily operations require dissemination of planning information to the public or other organizations and coordination with NCDOT and other agencies. Other general administrative, communications, and staff/ TCC/ TAC development functions also fall under M&O.

Table 3: Administration

TABLE 3

AGENCY RESPONSIBILITIES
FOR
ADMINISTRATION

GREENSBORO URBAN AREA

▲ Primary Responsibility

● Supporting responsibility

		Lead Planning Agency City of Greensboro	Regional/MPO Model Custodian, SWP	Guilford County	Region I Council of Governments	Piedmont Triad International Airport	PART	NCDOT Division 7 Offices	NCDOT Traffic Engineering Branch	NCDOT Public Transportation Division
III-A	Planning Work Program	▲	●	●		●	●			●
III-B	Transportation Improvement Program	▲	●	●	●		●	●	●	●
III-C-1	Title VI	▲								●
III-C-2	Environmental Justice	▲	●	●	●		●			
III-C-3	Minority Business Enterprise Planning	▲	●							
III-C-4	Planning for the Elderly and Disabled	▲	●	●	●		●			●
III-C-5	Safety/ Drug Control Planning	▲								●
III-C-6	Public Involvement	▲	●	●	●	●	●	●	●	●
III-C-7	Private Sector Participation	▲								●
III-D-1	Transportation Enhancement Planning	▲	●	●			●	●	●	●
III-D-2	Environmental Anaysis and Pre-TIP Planning	●	▲	●			●			
III-D-3	Special Studies	▲	●	●			●		●	●
III-D-4	Regional or Statewide Planning	●	▲		●		●	●		●
III-E	Management and Operations	▲		●			●	●	●	●

IV. APPENDICES

APPENDIX A. HISTORY AND STATUS

TRANSPORTATION PLANNING HISTORY AND STATUS

The development and adoption of a Thoroughfare Plan was provided for in North Carolina General Statutes 136-66, enacted by the State Legislature in 1959. These General Statutes require State-municipal cooperative development of a Thoroughfare Plan, provide for State-municipal adoption of the plan, require State-municipal agreement on street and highway system responsibilities, define State and municipal responsibilities, and provide for revision of the plan.

In 1962, Section 134, Title 23 of the United States Code was enacted by Congress which required a continuing and comprehensive transportation planning process carried on cooperatively by states and local communities for all urban areas over 50,000 (3C Planning Process). The Federal Highway Act of 1973 provided for Federal planning funds to be disbursed through the States to MPOs for the purpose of accomplishing transportation planning, and for the first time, permitted limited use of Federal highway funds for urban mass transit projects.

LOCAL AREA TRANSPORTATION PLANNING HISTORY

Transportation planning has been underway for the Greensboro Urban Area for many years. The development of the Thoroughfare Plan, which serves as Greensboro's official street plan, dates back to 1953. At that time the City undertook the guidance of Dr. W. F. Babcock to develop a thoroughfare plan for the City. The plan was based primarily on the land development plan and was prepared by the City Planning Department. Mutual adoption of this Plan took place in 1960.

State statutes enacted in 1959 and Federal mandates passed by Congress in 1962, provided the legal basis for continuation of the long range planning process. Based on these mandates, the Bureau of Public Roads reviewed the transportation planning process in Greensboro in 1963 and determined it was generally adequate. Recommendations were made however, that comprehensive inventories of existing travel were needed.

In 1964 Greensboro contracted with Allen Voorhees and Associates to evaluate the transportation plan using 1980 travel forecasts. A 1000 sample home interview was conducted and data from the 1963 external origin and destination survey were analyzed. This study was completed in 1965 and resulted in several revisions to the 1960 Plan.

Following the consultant's study, the Greensboro Engineering Department and the Advance Planning Department of the Highway Commission did further studies and prepared functional designs for the new thoroughfares. These revisions were adopted by Greensboro on May 8, 1967 and the State Highway Commission on June 2, 1967.

As specified by Federal Law, a Memorandum of Understanding was signed by the City, Guilford

County and the State Highway Commission in June, 1965. This document set up the framework for long-range transportation planning in the area but did not establish a Technical Coordinating Committee or a Transportation Advisory Committee. This was the beginning of the "3-C" planning process for the Greensboro Urban Area.

In 1968 the first operations plan for the area was approved. This was the predecessor of the present day Planning Work Program.

As a result of growth indicated by the 1970 Census, the planning area was enlarged and a reevaluation of the Plan was initiated. This was the first study to use computerized travel demand modeling to predict growth in travel for the area. It required an external origin and destination survey, collection and projection of land use data and application of the four-step travel demand modeling process.

A comprehensive transit improvement study was initiated in 1974 in cooperation with the Thoroughfare Plan reevaluation. The transit study was done by William S. Pollard Consultant, Inc. and is documented in a report entitled Transit Improvement Study, Greensboro, North Carolina, 1976. Based on this and other information, a revised Thoroughfare Plan was approved in 1977. Two minor revisions to this plan were made in 1979.

As a result of the Federal-Aid Highway Act of 1973, a revised Memorandum of Understanding was approved in 1975. This for the first time established a Transportation Advisory Committee and a Technical Coordinating Committee with the responsibility of developing a coordinated multi-modal transportation improvement plan.

In 1975 new land use data was collected, which was used to develop a model to predicted travel for year 2000. In the 1980s most of the transportation planning work concerned refinement of the alignment for the Greensboro Loop and Bryan Boulevard. These studies resulted in a revised plan that was adopted in 1989.

Early in the 1990s it was recognized that a regional model needed to be developed for the entire Piedmont Triad Area. This resulted in external and internal origin and destination surveys, a 100% survey of housing and employment and the development of a calibrated multi-modal regional model. As a result of the 1990 Census, Greensboro barely missed becoming a TMA, and air quality analysis became a more important part of the process. This resulted in a multi-modal transportation plan that was adopted by the Transportation Advisory Committee in the summer of 1999.

In 2000 a new Memorandum of Understanding was developed and adopted. This document reflected the implications of TEA-21 and was produced to better reflect the contemporary activities of the MPO and the relationships between member governments as well as with newly incorporated small towns in the MPO service area.

APPENDIX B. TRANSPORTATION PLANNING GOALS AND OBJECTIVES

Goals and Objectives

The transportation planning goals, strategies, and objectives of the Greensboro Urban Area Metropolitan Planning Organization as outlined in the Prospectus are listed below. These items serve as a guide in transportation plan, program, and project development. The seven planning factors identified in the Transportation Equity Act for the 21st Century (TEA-21) also provide a key set of goals and considerations that are substantially advanced by the Greensboro Urban Area Metropolitan Planning process. Additional factors, as may be established in future transportation legislation, or identified through the Long-Range Transportation Plan process, would further define the scope of the MPO's responsibilities.

Goals

I. Provide an adequate highway and street system to serve the current and long-term needs of the community.

II. Provide for and encourage the use of other modes of transportation. Planning activities should increase the use of other modes to more effectively utilize the existing transportation network.

III. Design transportation projects so as to avoid or at least minimize negative impacts on: neighborhoods, water quality, noise levels, air quality, energy usage, etc.

IV. Develop, maintain, update, and follow a long-range comprehensive plan.

V. Adopt a transportation plan that reflects the needs and desires of the community.

Seven Planning Factors Identified by TEA-21

The Greensboro Urban Area Metropolitan Planning process and the 2025 Long Range Transportation Plan provide for the consideration of projects and strategies that will:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety and security of the transportation system for motorized and non-motorized users;
3. Increase the accessibility and mobility options available to people and for freight;
4. Protect and enhance the environment, promote energy conservation, and improve quality of life;
5. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
6. Promote efficient system management and operation; and
7. Emphasize the preservation of the existing transportation system.